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EXAMINER	
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ART UNIT	PAPER NUMBER
2123	

DATE MAILED: 10/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/749,303	CHAN ET AL.	
	Examiner	Art Unit	
	Thomas H. Stevens	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 July 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 December 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-41 were examined.

Section I Response to Arguments

Drawings

2. The applicants are thanked for responding to this issue, which the examiner has withdrawn prior art argument for drawings 1-4.

35 U.S.C. 112 Rejections

3. The applicants are thanked for responding to this issue. With regard to claims 6,13, and 25, the phrase "average performance" is understandable with the art it pertains to, however the phrase doesn't further limit the claim; the phrase itself denotes an infinite amount results. By applicants own admission (i.e., pg. 15, line 1) that this phrase is a measure over a period of time proclaims a mathematical concept or abstract idea. The same reasoning and rejection applies to claims 7,14, and 26 for the phrase "highest performance". The rejections stand.

4. The examiner acknowledges the changes to claims 11 and 28 regarding deleting the word "various"; rejection is withdrawn.

5. The applicants' response to "similar turbines" is non persuasive on its merits of not adhering to the meets and bounds of the claim. Rejection stands.

35 U.S.C. 102 and 103 Rejections

6. The applicants' are thanked for responding to this issue. However, the applicants have changed the specification (i.e., adding new matter) , which is reflected in the amended claims. Based on this fact, the examiner has not considered the term "operational" in claims since this feature is not disclosed in the original specification; the rejection stands.

Section II Rejections

7. The amendment filed 7/16/04 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention, as follows: *A method and system for analyzing performance of [[a]]* ***an actual (or operational) turbine*** *is provided. In one embodiment, the turbine optimizer system allows a user to evaluate the current performance of their turbine with its current configuration and the future performance of their turbine with a modified configuration. The evaluated performance may be expressed in terms of certain performance characteristics such as output, heat rate, availability, and reliability. The turbine optimizer may provide a comparison of these performance characteristics versus the performance characteristics of similar turbines. For example, the turbine optimizer may indicate the average performance of similar turbines and the best performance of similar turbines. The turbine optimizer initially receives from the user the identification of the turbine to be analyzed. The turbine optimizer then retrieves the configuration information for the identified turbine*

from its configuration database. The configuration database may contain information describing the configuration of each turbine that is currently installed at a customer power plant. The turbine optimizer then determines the current performance characteristics of the identified turbine based on the retrieved configuration information. As discussed below, in more detail, the turbine optimizer may determine the current performance characteristics based on actual measurements of those performance characteristics (e.g., during a precision test), based on initial performance characteristics of a new turbine adjusted to account for hours of operation of the turbine, and based on a simulation of the performance characteristics using measurements of other characteristics (e.g., instrumentation readings). The turbine optimizer then provides to the user a display page that lists the actual or estimated current performance characteristics. That display page may also include current configuration information (e.g., total hours of operation) so that the user can make any appropriate corrections to the information. Upon receiving from the user a request to display the future performance characteristics, the turbine optimizer calculates the performance characteristics for that turbine if various modifications are made to is configuration. The turbine optimizer may provide a graph that illustrates the current performance characteristics and the future performance characteristics with those modifications. The turbine optimizer may also calculate various financial estimates (e.g., the estimated annular revenue) based on the current operating characteristics (e.g., fuel cost and electricity price) of the turbine. The turbine optimizer may also allow the user to place an order to change the configuration of the turbine. In this way, the user can evaluate the

performance of turbine based on accurate configuration information, can receive prompt feedback as to the performance characteristics of various modifications, can evaluate financial impact of various modifications, and can compare the performance characteristics of the turbine to performance characteristics of similar turbines.

. Applicant is required to cancel the new matter in the reply to this Office Action.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-9,11-18,20,21, 23-29,31-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Reed et al. ("Developing Interactive Education Engineering Software for the World Wide Web with Java" ACM, 1998).

Reed et al. teaches a gas turbine simulation system which utilizes the Java language environment software across the Internet (abstract).

Claim 1: A method in a computer system for determining performance of a turbine (abstract), the method comprising: receiving from a user an identification of a turbine (pg. 3, lines 10-11); retrieving configuration information for the identified turbine; determining current performance characteristics of the turbine based on the retrieved configuration information (pg. 3, lines 10-11); sending to

the user a display page for displaying the determined current performance characteristics (pg. 4, figure 1 and 3rd paragraph); receiving from the user an indication of a modification to the configuration of to the identified turbine (pg. 6, figure 3 with lines 3-7); determining future performance characteristics of the identified turbine based on the indicated modification to its configuration (pg. 6, figure 3 with lines 3-7); and sending to the user a display page for displaying the determined future to performance characteristics (pg.7)

Claim 2: The method of claim I (abstract; pg. 3, lines 10-11; pg. 4, figure 1 and 3rd paragraph; pg. 6, figure 3 with lines 3-7), wherein the determining of the current performance characteristics includes simulating the current performance characteristics based on various readings collected from the identified turbine (pg. 3, lines 10-11).

Claim 3: The method of claim 2 (abstract; pg. 3, lines 10-11; pg. 4, figure 1 and 3rd paragraph; pg. 6, figure 3 with lines 3-7), wherein the simulating of the current performance characteristics includes estimating fuel (pg. 6, figure 3, with lines 3-5) flow by repeatedly simulating the current performance characteristics with a varying fuel flow until a desired combustor efficiency is achieved (Reed: pg. 7second paragraph).

Claim 4: The method of claim 1(abstract; pg. 3, lines 10-11; pg. 4, figure 1 and 3rd paragraph; pg. 6, figure 3 with lines 3-7) wherein the determining of the current performance characteristics includes adjusting initial performance characteristics based on length of time the identified turbine has been in operation (pg.7, 2nd and 3 rd paragraphs).

Claim 5: The method of claim 1(abstract; pg. 3, lines 10-11; pg. 4, figure 1 and 3rd paragraph; pg. 6, figure 3 with lines 3-7) wherein the determining of the current performance characteristics includes measuring the performance characteristics of the turbine (pg.7, 2nd paragraph with figure 6).

Claim 6: The method of claim 1(abstract; pg. 3, lines 10-11; pg. 4, figure 1 and 3rd paragraph; pg. 6, figure 3 with lines 3-7) wherein the display page includes an indication of average performance characteristics for similar turbines (pg. 8, figure 7).

Claim 7: The method of claim 1(abstract; pg. 3, lines 10-11; pg. 4, figure 1 and 3rd paragraph; pg. 6, figure 3 with lines 3-7) wherein the display page (pg. 5, figure) include an indication of highest performance characteristics for similar turbines.

Claim 8: The method of claim 1(abstract; pg. 3, lines 10-11; pg. 4, figure 1 and 3rd paragraph; pg. 6, figure 3 with lines 3-7) wherein the display page includes a graph illustrating performance characteristics (pg. 7, figure 6).

Claim 9: The method of claim 8(abstract; pg. 3, lines 10-11; pg. 4, figure 1 and 3rd paragraph; pg. 6, figure 3 with lines 3-7) wherein the graph includes a background with colors that transition from a shade of red to a shade of yellow to a shade of green (pg. 5, lines 21-23,26-27).

Claim 11: A method in a computer system for determining performance of a Turbine (abstract), the turbine having a configuration, the method comprising: simulating a current performance characteristic based on various readings collected from an identified turbine (pg. 7, 2nd paragraph); receiving from a user an indication of a modification to the configuration of the identified turbine (pg. 7, 2nd paragraph); determining a future performance characteristic of the identified turbine based on the indicated modifications to its configuration(pg. 7, 2nd paragraph); and sending to the user a display page for displaying the determined future to performance characteristic (pg. 2, Visual Construction of the Engine Model, 1st paragraph with figure 2).

Claim 12: The method of claim 11(abstract; pg. 7, 2nd paragraph; pg. 3, Gas Turbine Analysis Model section, 1st paragraph) wherein the simulating of the

current performance characteristic includes estimating fuel flow by repeatedly simulating the current (pg. 6, Engine Component Dialogs section, 1st paragraph) performance characteristic with a varying fuel flow until a desired combustor efficiency (pg. 6, figure 4) is achieved.

Claim 13: The method of claim 11(abstract; pg. 7, 2nd paragraph; pg. 3, Gas Turbine Analysis Model section, 1st paragraph; pg. 6, Engine Component Dialogs section, 1st paragraph) wherein the display page includes an indication of an average for the performance characteristic for similar turbines (pg. 8, figure 7).

Claim 14: The method of claim 11(abstract; pg. 7, 2nd paragraph; pg. 3, Gas Turbine Analysis Model section, 1st paragraph; pg. 6, Engine Component Dialogs section, 1st paragraph) wherein the display page includes an indication of a highest performance characteristic for similar turbines (pg. 8, figure 7, with pg. 7 2nd paragraph).

Claim 15: The method of claim 11(abstract; pg. 7, 2nd paragraph; pg. 3, Gas Turbine Analysis Model section, 1st paragraph; pg. 6, Engine Component Dialogs section, 1st paragraph) wherein the display page includes a graph illustrating performance characteristics (pg. 5, lines 21-22).

Claim 16: The method of claim 15 (abstract; pg. 7, 2nd paragraph; pg. 3, Gas Turbine Analysis Model section, 1st paragraph; pg. 6, Engine Component Dialogs section, 1st paragraph; pg. 5, lines 21-22) wherein the graph includes a background with colors that transition from a shade of red to a shade of yellow to a shade of green.

Claim 17: The method of claim 11 (abstract; pg. 7, 2nd paragraph; pg. 3, Gas Turbine Analysis Model section, 1st paragraph; pg. 6, Engine Component Dialogs section, 1st paragraph) wherein the display page is a web page (Reed: abstract).

Claim 18: The method of claim 11 (abstract; pg. 7, 2nd paragraph; pg. 3, Gas Turbine Analysis Model section, 1st paragraph; pg. 6, Engine Component Dialogs section, 1st paragraph) wherein the display page is sent via the Internet (abstract).

Claim 20: A method in a computer system for displaying a performance characteristic of a turbine, the method comprising (abstract): sending an identification of a turbine; and receiving a display page indicating a performance characteristic of the identified turbine relative to the performance characteristic for similar turbines (pg.7, 2nd paragraph).

Claim 21: The method of claim 20 (abstract; pg.7, 2nd paragraph) including sending an indication of a modification to the identified turbine; and receiving a display page indicating the performance characteristic of the identified turbine with the indicated modification (pg.7, 2nd paragraph with figure 6).

Claim 23: The method of claim 20 (abstract; pg.7, 2nd paragraph; figure 6) wherein the performance characteristic of the identified turbine is displayed as a graph (pg. 7, 2nd paragraph with figure 7).

Claim 24: The method of claim 23 (abstract; pg.7, 2nd paragraph; figure 6) wherein the graph indicates the performance characteristic for similar turbines (pg. 7, 2nd paragraph with figure 7).

Claim 25: The method of claim 24 (abstract; pg.7, 2nd paragraph; figure 6) wherein the graph includes an indication of an average performance characteristic for similar turbines (pg. 7, 2nd paragraph with figure 7).

Claim 26: The method of claim 24 (abstract; pg.7, 2nd paragraph; figure 6) wherein the graph includes an indication of a highest performance characteristic for similar turbines (pg. 7, (abstract; pg.7, 2nd paragraph; figure 7).

Claim 27: The method of claim 23 (abstract; pg.7, 2nd paragraph; figure 6) wherein the graph includes a background with colors that transition from a shade of red to a shade of yellow to a shade of green (pg. 5, lines 21-23,26-27).

Claim 28: A computer-readable medium containing instructions for controlling a computer system to determine a performance characteristic of a turbine, the turbine having a configuration, by a method comprising: simulating a current performance characteristic based on various readings collected from an identified turbine (abstract); receiving an indication of a modification to the configuration of the identified turbine (pg.7, 2nd paragraph); and determine a future performance characteristic, if the identified turbine based on the indicated modifications to its configuration (pg.7, 2nd paragraph).

Claim 29: The computer-readable medium of claim 28 (abstract; pg.7, 2nd paragraph) wherein the simulating of the current performance characteristic includes estimating fuel flow by repeatedly simulator (pg. 4, 2nd paragraph with figure 4) the current performance characteristic by varying fuel flow until desired combustor efficiency is achieved.

Claim 31: The computer-readable medium of claim 28 (abstract; pg.7, 2nd paragraph; pg. 4, 2nd paragraph with figure 4) including sending a display page

for displaying the determined future performance characteristic (pg 7, 2nd paragraph, with figure 7).

Claim 32: The computer-readable medium of claim 31 (abstract; pg.7, 2nd paragraph; pg. 4, 2nd paragraph with figure 4) wherein the display page includes an indication of an average for the performance characteristic for similar turbines (pg 7, 2nd paragraph, with figure 7).

Claim 33: The computer-readable medium of claim 31(abstract; pg.7, 2nd paragraph; pg. 4, 2nd paragraph with figure 4) wherein the display page includes an indication of a highest performance characteristic for similar turbines (pg 7, 2nd paragraph, with figure 7).

Claim 34: The computer-readable medium of claim 31(abstract; pg.7, 2nd paragraph; pg. 4, 2nd paragraph with figure 4) wherein the display pages includes a graph illustrating the performance characteristics (pg 7, 2nd paragraph, with figure 7).

Claim 35: The computer-readable medium of claim 34 (abstract; pg.7, 2nd paragraph; pg. 4, 2nd paragraph with figure 4) wherein the graph includes a background with colors that transition from a shade of red to a shade of yellow to a shade of green (pg. 5, lines 21-23,26-27).

Claim 36: The computer-readable medium of claim 31 (abstract; pg.7, 2nd paragraph; pg. 4, 2nd paragraph with figure 4) wherein the display page is a web page (abstract).

Claim 37: The computer-readable medium of claim 31 (abstract; pg.7, 2nd paragraph; pg. 4, 2nd paragraph with figure 4) wherein the display page is sent via the Internet (abstract).

Claim 38: A computer system for determining a performance characteristic of a Turbine, the turbine having a configuration, comprising (abstract): means for receiving an indication of a modification to the configuration of an identified turbine (pg.7, 2nd paragraph); and means for determining a future performance characteristic of the identified turbine based on the indicated modifications to its configuration (pg. 2, Visual Construction of the Engine Model, 1st paragraph with figure 2).

Claim 39: The computer system of claim 38 (abstract; pg.7, 2nd paragraph) including: means for simulating a current performance characteristic based on various readings collected from the identified turbine (pg. 7, 2nd paragraph with figure 6).

Claim 40: The computer system of claim 39 wherein the means for simulating the current performance characteristic includes means for estimating fuel flow by repeatedly simulating (pg. 6, Engine Component Dialogs section, with figure 4) the current performance characteristic by varying fuel flow until a desired combustor (pg. 4, lines 3 and 4 with figure 1) efficiency is achieved.

Claim Rejections - 35 USC § 103

10. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that

the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 10,19,22,30 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reed et al. ("Developing Interactive Education Engineering Software for the World Wide Web with Java" ACM, 1998) in view of Kita et al. (U.S. Patent 5,886,895 (1999)).

Reed et al. teaches a gas turbine simulation system which utilizes the Java language environment software across the Internet (abstract); but doesn't teach financials.

Kita et al. teaches calculating optimum operation parameters of a boiler-turbine-generator (BTG), while taking into account cost (abstract and figure 1 (blocks 71-73)).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to use Kita et al. to modify Reed et al. since it would have been advantageous for quality control personnel, internal and external, to simulate real-time operations to capture empirical financial data for feasibility studies and cost benefit analysis,

Claim 10: The method of claim 1 (Reed: abstract; pg. 3, lines 10-11;pg. 4, figure1 with 3rd paragraph; pg.6, figure 3 with lines 3-7;and pg.7) including receiving financial information (Kika: figure 1, (blocks 71,76) with column 9, lines 25-42) relating to operation of the identified turbine and estimating revenue generated from the identified turbine with the indicated modification.

Claim 19: The method of claim 11 (Reed: abstract; pg. 3, lines 10-11;pg. 4, figure1 with 3rd paragraph; pg.6, figure 3 with lines 3-7;and pg.7) including receiving financial information (Kika: figure 1, (blocks 71,76) with column 9, lines 25-42) relating to operation of the identified turbine and estimating revenue generated from the identified turbine with the indicated modification.

Claim 22: The method of claim 20 (Reed: abstract; pg.7, 2nd paragraph with figure 6) wherein the display page includes financial Information (Kika: figure 1, (blocks 71,76), with column 9, lines 25-42) elating to possible modifications to the identified turbine (Reed: pg.7, lines 1-4;and figure 6).

Claim 30: The computer-readable medium of claim 28(Reed: abstract; pg.7, 2nd paragraph with figure 6) including receiving financial information (Kika: figure 1, (blocks 71,76) with column 9, lines 25-42) relating to operation of the identified turbine and estimating revenue generated from the identified turbine with the indicated modification.

Claim 41: The computer system of claim 38(Reed: abstract; pg.7, 2nd paragraph with figure 6) including means for receiving financial information (Kika: figure 1, (blocks 71,76) with column 9, lines 25-42) relating to operation of the identified turbine and means for estimating revenue generated from the identified turbine with the indicated modification.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom Stevens whose telephone number is

(703) 305-0365, Monday-Friday (8:30 am- 5:30 pm) or contact Supervisor Mr. Kevin Teska at (703) 305-9704. The fax number for the group is 703-872-9306. Any inquires of general nature or relating to the status of this application should be directed to the Group receptionist whose phone number is (703) 305-3900.

September 29, 2004

THS

Primary Examiner
T.C. 2100